

Substitute Specification
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METHOD FOR IDENTIFICATION AND DETECTION OF MICROORGANISMS
USING GYRASE GENE AS AN INDICATOR

BACKGROUND OF THE INVENTION

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1. Field of the Invention

The present invention is involved in a method for the identification and detection of organisms using the sequences of their genes encoding the B subunit of the DNA gyrase.

This invention is useful in medical fields as well as various industrial fields where the identification/classification or detection/monitoring of specific microorganisms (bacteria, yeasts, fungi, archaea and bacteria), especially bacteria, is necessary.

2. Prior Art

Conventionally, the identification/classification of living organisms has been carried out using the combination of biochemical and morphological tests. However, these tests often did not provide unequivocal answers to the taxonomic positions of tested organisms.

Recently, the taxonomy of organisms, in particular of bacteria, using rRNA sequences became fashionable. There are many reasons why rRNA molecules have been selected as standard molecules for the molecular taxonomy. They are constituents of all organisms. They exist in abundance, and therefore, can readily be isolated and characterized. For sequence comparison, many conserved regions of rRNA molecules allowed the alignment between distantly related organisms, while variable regions are useful for the distinction of closely related organisms (van de Peer, Y., S. Chappelles, and R. de Wachter. 1996. A quantitative map of nucleotide substitution rates in bacterial rRNA. *Nucleic Acids Res.* 24: 3381-3391; and Gutell, R. R., N. Larsen, and C. R. Woese. 1994. Lessons from an evolving